

Claims

1. A carding machine for the bundled fibers is comprised of a machine that is equipped with a feed roll wound with the bundled fibers; a carding unit to card the carding fibers drawn out from this feed roll with a fluid that flows in the direction orthogonal to the moving direction of the bundled fibers; and a rewind roll that rewinds the carded sheet that is carded in the carding unit and is characterized by the said carding unit possessing one or more supporting parts placed at certain intervals along the moving direction of the bundled fibers.

2. The carding machine for the bundled fibers described in claim 1, characterized in that the said

carding unit is equipped with an internal frame that forms a fluid flow path, guiding parts with large diameter placed at the front and back ends of the bundled fibers in the moving direction within this frame, and more than one small diameter supporting parts placed between these guiding parts.

3. The carding machine for the bundled fibers described in claim 2, characterized in that a guiding part and/or supporting part in the said carding unit that is approximately cylindrical and is either fixed or is revolvable around a shaft.

4. The carding machine for the bundled fibers described in claim 3, characterized in that more than one of the said supporting parts that are placed in a plane or an approximately crescent form against the moving direction of the fluid.

5. The carding machine for the bundled fibers described in claim 3, characterized in that the said carding unit is placed into multiple stages along the moving direction of the bundled fibers.

6. The carding machine for the bundled fibers described in claim 4, characterized in that the said carding unit is placed into multiple stages along the moving direction of the bundled fibers.

7. The carding machine for the bundled fibers described in claim 5 characterized in that the width of the traveling path of the bundled fibers in the said multistage carding unit that is increased from upstream to downstream in an orderly manner.

8. The carding machine for the bundled fibers described in claim 6, characterized in that the width of the traveling path of the bundled fibers in said multistage carding unit that is increased from upstream to downstream in an orderly manner.

9. The carding machine for the bundled fibers described in claim 1, characterized in that the said feed roll is placed with its shaft in a vertical position.

10. The carding machine for the bundled fibers described in claim 2, characterized in that the said feed roll is placed with its shaft in a vertical position.

11. The carding machine for the bundled fibers described in claim 3, characterized in that the said feed roll is placed with its shaft in a vertical position.

12. The carding machine for the bundled fibers described in claim 4, characterized in that said feed roll is placed with its shaft in a vertical position.

13. The carding machine for the bundled fibers described in claim 5, characterized in that the said feed roll is placed with its shaft in a vertical position.

14. The carding machine for the bundled fibers described in claim 6, characterized in that the said feed roll is placed with its shaft in a vertical position.

15. The carding machine for the bundled fibers described in claim 9, characterized in that more than one feed roll is placed.

16. The carding machine for the bundled fibers described in claim 10, characterized in that more than one feed roll is placed.

17. The carding machine for the bundled fibers described in claim 11, characterized in that more than one feed roll is placed.

18. The carding machine for the bundled fibers described in claim 12, characterized in that more than one feed roll is placed.

19. The carding machine for the bundled fibers described in claim 13, characterized in that more than one feed roll is placed.

20. The carding machine for the bundled fibers described

in claim 14, characterized in that more than one feed roll is placed.

21. The carding machine for the bundled fibers described in claim 5, characterized in that more than one said carding unit is placed in parallel in the direction orthogonal to the moving direction of the bundled fibers.

22. The carding machine for the bundled fibers described in claim 6, characterized in that more than one said carding unit is placed in parallel in the direction orthogonal to the moving direction of the bundled fibers.

23. The carding machine for the bundled fibers described in claim 5, characterized in that the carding unit is placed in more than one stage along the moving direction of said bundled fibers, and/or more than one carding unit placed in parallel and orthogonal to the moving direction of the bundled fibers that share at least part of the components to form a sequentially integrated form.

24. The carding machine for the bundled fibers described in claim 6, characterized in that the carding unit is placed in more than one stage along the moving direction of said bundled fibers, and/or more than one carding unit is placed in parallel and orthogonal to the moving direction of the bundled fibers that share at least part of the components to form a sequentially integrated form.

25. The carding machine for the bundled fibers described

in claim 7, characterized in that the carding unit is placed in more than one stage along the moving direction of said bundled fibers, and/or more than one carding unit placed in parallel and orthogonal to the moving direction of the bundled fibers that share at least part of the components to form a sequentially integrated form.

26. The carding machine for the bundled fibers described in claim 8, characterized in that the carding unit is placed in more than one stage along the moving direction of said bundled fibers, and/or more than one carding unit placed in parallel and orthogonal to the moving direction of the bundled fibers that shares at least part of the components to form a sequentially integrated unit.

27. The carding machine for the bundled fibers described in claim 21, characterized in that the carding unit is placed in more than one stage along the moving direction of said bundled fibers, and/or more than one carding unit placed in parallel and orthogonal to the moving direction of the bundled fibers that shares at least part of the components to form a sequentially integrated form.

28. The carding machine for the bundled fibers described in claim 22, characterized in that the carding unit is placed in more than one stage along the moving direction of said bundled fibers, and/or more than one carding unit placed in parallel and orthogonal to the moving direction of the bundled fibers

that shares at least part of the components to form a sequentially integrated form.

29. The carding machine for the bundled fibers described in claim 1, characterized in that the said carding unit has a fluid flow path with a heated fluid.

30. The carding machine for the bundled fibers described in claim 2, characterized in that the guiding parts and/or supportive part in said carding unit is heated.

31. The carding machine for the bundled fibers described in claim 30, characterized in that the said guiding parts and/or supportive part is equipped with a built-in heater.

32. The carding machine for the bundled fibers described in claim 30, characterized in that the said guiding parts and/or supportive part has the shape of a pipe, through which heated fluid is flown.

33. The carding machine for the bundled fibers described in claim 32, characterized in that the said guiding parts and/or supportive part has a pipe shape and a slit crossing the moving direction of the bundled fibers where the heated fluid is ejected from this slit.